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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AVELLINO, JOSEPH E

ART UNIT

PAPER NUMBER

2143

NOTIFICATION DATE

DELIVERY MODE

03/19/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patent-ch@btlaw.com

Office Action Summary	Application No. 10/054,207	Applicant(s) KERMAREC ET AL.	
	Examiner Joseph E. Avellino	Art Unit 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-27, 30-33 and 49-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 28 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 20-33, and 49-58 are presented for examination; claims 20, and 49 independent.

Allowable Subject Matter

2. Claims 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form *including all of the limitations of the base claim and any intervening claims*.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 21-25, 30, 31, and 49-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain et al. (USPN 6,765,914) (hereinafter Jain) in view of Walker et al. (USPN 6,701,375) (hereinafter Walker) in view of Goodwin (US 2002/0124107).

4. Referring to claim 20, Jain discloses a method of providing a VPN service through a shared network infrastructure comprising a plurality of interconnected provider edge (i.e. switches 120, 130, 140) having customer edge (i.e. hosts coupled via switch ports 123-125, 133-135, 143-145)) interfaces, wherein some of the CE interfaces are allocated to a VPN supporting a plurality of VLANs and are arranged for exchanging

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tagged data frames (i.e. tagged with VLAN-ID) with CE devices respectfully connected to the PE devices through said CE interfaces, the method comprising the following steps:

receiving at least one tagged frame from a CE device (i.e. receive a packet with VLAN ID) at each CE interface (i.e. switch port) allocated to said VPN, (Figure 4, VLANs 401, 402, and 403 have respective identifiers identifying the VLANs).

detecting whether a pair of CE interfaces allocated to said VPN and belonging to two PE devices correspond to a common VLAN identifier (i.e. determining whether a source address and a destination address correspond to the same VLAN) (col. 5 line 43 to col. 6, line 27); and

in response to such detection, establishing a connection (an inherent feature, otherwise the packet cannot be transferred between the PE devices) in the shared infrastructure between said two PE devices 120, 130 for forwarding the frame including said common VLAN identifier (i.e. forwarding the packet to the switch's bus connecting port, which receives the packet, and forwards the packet to the appropriate host) (col. 6, lines 1-10).

Jain does not disclose the connection is a virtual circuit in the shared network infrastructure between said two PE devices for forwarding frames including said VLAN ID, rather if a VLAN ID is not found, the packet is forwarded to all local switch ports and all other switches (col. 6, lines 1-28). In analogous art, Walker discloses another method of providing VPN services through a shared network infrastructure which discloses determining a routing to a destination CE (i.e. second host) device by issuing

flooding address resolution requests (i.e. broadcast) to all other PE devices to determine where the destination device is, and then establishes a virtual circuit between the two PE devices (col. 2, line 51 to col. 3, line 15). It would have been obvious to one of ordinary skill in the art to combine the teaching of Jain with Walker in order to provide an efficient method of transferring packets, by creating a virtual circuit which efficiently and transparently transfers packets between devices, resulting in a more efficient use of bandwidth, which Jain acknowledges is a problem with the flooding of the packet (Jain: col. 6, lines 25-28 “even at the expense of bus bandwidth”).

Jain-Walker does not explicitly disclose the switch/router automatically learns the correspondence between the CE device and the VLAN identifier. In analogous art, Goodwin discloses another VLAN communication scheme wherein a switch will flood an unknown source MAC address to other switches such that the switches will learn the VLAN membership of the MAC address (¶¶ 20-22). It would have been obvious to one of ordinary skill in the art to substitute the VLAN formation system of Jain-Walker with the VLAN learning system of Goodwin in order to realize the benefits of Goodwin to the system of Jain-Walker, specifically by reducing the manual assignments needed to configure the switches for correct routing of the packets. By using Goodwin, the switches automatically learn the VLAN membership of each of the client devices, thereby saving precious man-hours over the prior art approach.

5. Referring to claim 21, Jain-Walker discloses establishing a respective flooding virtual circuit in the shared network infrastructure between each pair of PE devices

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having at least CE interface allocated to said VPN (i.e. broadcasting) (Walker: col. 2, lines 60-65).

in response to reception of a first tagged frame including a VLAN identifier at a first CE interface, propagating said first tagged frame on each flooding VC established from the first PE device (col. 2, lines 60-65);

in response to reception of the first aged frame on a flooding VC at another PE device, propagating a frame to each CE device (col. 7, lines 10-20).

6. Referring to claim 22, Jain-Walker discloses the correspondence between the first CE interface and the VLAN identifier is learnt in response to the reception of the first tagged frame including said VLAN identifier at the first CE interface (i.e. learning the routing and destination of a particular address for a connection) (Walker: col. 6, lines 20-35).

7. Referring to claim 23, Jain-Walker discloses allocating, at the first PE device, a first virtual circuit resource for said VPN and the VLAN identifier (i.e. source/destination pairing) included in the tagged frame (i.e. creates a virtual circuit) (Walker: col. 6, lines 35-45);

transmitting a first signaling message from the first PE device to each other PE device having at least one CE interface indicating the first virtual circuit resource (i.e. circuit) and VLAN identifier (Walker: col. 6, lines 38-63

in response to reception of the first signaling message at east other PE device, storing an identification of the first virtual circuit resource in association with said VPN and VLAN identifier (Walker: col. 6, lines 38-63).

8. Referring to claim 24, Walker discloses transmitting a second signaling message from said other PE device to the first PE device thereby completing establishment of a VC, defined by the first and second VC resource (col. 6, lines 38-63).

9. Referring to claim 25, Walker discloses two VC's are used to forward data in two directions ("used to establish a static route back to the host") (col. 6, lines 50-57).

10. Referring to claim 30, Jain-Walker disclose the invention as described in the claims above, however do not specifically limit the amount of CE devices to two or less. However Walker does show that only one CPE device (i.e. Host) is connected to an edge node (i.e. router) (Figure 1). This would motivate one of ordinary skill in the art to put any arbitrary number of nodes on a PE device. By this rationale, "Official Notice" is taken that both the concept and advantages of providing for no more than two CE interfaces is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Jain-Walker to provide no more than two CE devices in order to provide adequate service to the customer, without requiring numerous connections to various devices.

11. Referring to claim 31, Jain-Walker disclose the invention substantively as described in claim 20, however do not specifically disclose that the CE interfaces are Ethernet interfaces, however Ethernet is well known in the networking art for interacting with VPNs. By this rationale, "Official Notice" is taken that both the concept and advantages of providing Ethernet interfaces is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching to include Ethernet in order to include various different networking interfaces, thereby allowing more computers to be connected to the network.

12. Claims 49-54 are rejected for similar reasons as stated above.

Claims 26, 27, 32, 33, and 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jain in view of Walker in view of Goodwin in view of Fotedar et al. (USPN 6,944,159) (hereinafter Fotedar).

13. Referring to claims 26 and 27, Jain-Walker discloses the invention substantively as described in claim 24. Jain-Walker do not specifically disclose the use of MPLS labels and signaling messages for transferring MPLS labels. In analogous art, Fotedar discloses another VPN service provision system which discloses disturbing MPLS labels and VLAN ids (e.g. abstract). It would have been obvious to one of ordinary skill in the art to combine the teaching of Fotedar with Jain-Walker in order to provide

transparent connectivity between an nodes in a network as supported by Fotedar (col. 1, lines 30-45).

14. Claims 32, 33, and 55-58 are rejected for similar reasons as stated above.

Response to Arguments

15. Applicant's arguments dated February 15, 2008 have been fully considered but are not persuasive.

16. Applicant argues, in substance, that neither Jain nor Walker disclose establishing a VC in response to the detection of a pair of CE devices...and establishing a VC for forwarding frames including said common VLAN identifier. The examiner agrees. Applicant is arguing the references separately, when it is the combination of Jain in view of Walker which meet the claimed limitations. Applicants are reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). By this rationale, it is clearly demonstrated that Jain in view of Walker meet the limitations as stated above and therefore the rejection is maintained.

17. Applicant argues, in substance, that Goodwin does not disclose learning VLAN membership of the endstations connected to the particular station, rather the learning

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only relates to VLAN membership propagated over the backbone, the switch always knows the VLAN membership of the endstations connected to it. The Examiner disagrees. Applicant is requested to review Goodwin, specifically ¶ 44, which states that "when an endstation sends a frame to the coupled switch [i.e. the switch directly connected to the endpoint], a policy match is performed and the endstation is placed in a VLAN. Thus those ports may be mapped to the VLAN dynamically based on traffic patterns". Also ¶ 15 states that "membership in VLANs...may be determined by applying policy to a specific traffic...VLAN membership may be detected by a function within the switch called source learning...the source learning function may apply the VLAN policies during processing of all unknown unicast...frames". This clearly demonstrates that a switch, when receiving a packet, such as a packet from a CE device from a previously unknown CE device 188, it will learn the source endpoint device information including MAC address of devices and their VLAN membership attributes (¶ 16), and then will forward this information using VAP as described in Goodwin. By this rationale, Goodwin clearly demonstrates learning the VLAN membership of endpoints connected locally to a switch and therefore the rejection is maintained.

Conclusion

18. Applicant has failed to seasonably challenge the Examiner's assertions of well known subject matter in the previous Office action(s) pursuant to the requirements set

forth under MPEP §2144.03. A "seasonable challenge" is an explicit demand for evidence set forth by Applicant in the next response. Accordingly, the claim limitations the Examiner considered as "well known" in the first Office action, are now established as admitted prior art of record for the course of the prosecution. See *In re Chevenard*, 139 F.2d 71, 60 USPQ 239 (CCPA 1943).

19. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph E. Avellino/
Primary Examiner, Art Unit 2143